



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,865	02/28/2007	Klaus Vogelsang	WW034USU	1091
27623 7590 04/15/2008 OHLANDT, GREELEY, RUGGIERO & PERLE, LLP ONE LANDMARK SQUARE, 10TH FLOOR STAMFORD, CT 06901				
EXAMINER DUFF, DOUGLAS J				
ART UNIT 3748		PAPER NUMBER		
MAIL DATE 04/15/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/576,865

**Applicant(s)**

VOGELSANG ET AL.

**Examiner**

DOUGLAS J. DUFF

**Art Unit**

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

This Office action is in response to Applicant's Amendments filed 1/14/08.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 11-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiereth et al. (US 5729978). Regarding claim 11, Hiereth et al. disclose a method for optimizing the action of the engine brake in a drive unit in a motor vehicle comprising providing an internal combustion engine (1) comprising a crankshaft; providing an exhaust gas turbine (8) along an exhaust gas flow of the internal combustion engine for the conversion of exhaust gas energy into drive energy, the exhaust gas turbine (8) being operably connected to the crankshaft (3) via a transfer device (15 to 13a); providing a hydrodynamic coupling comprising a primary wheel (15) and a secondary wheel (3) which is disposed in the transfer device, wherein the secondary wheel is coupled with the crankshaft (3) and the primary wheel is coupled with the exhaust gas turbine (8), at least indirectly; operating the exhaust gas turbine at a first working point during a braking operation (B1, nM is lower limit, Fig. 4), the first working point having a maximum acceptable limiting speed (nA) of the exhaust gas turbine with a minimum outputtable moment (0+, engine braking inoperative if below 0), operating the exhaust gas turbine at a second working point during a partial load or thrust operation (col. 6,

line 47), the second working point having a minimum speed ( $n_L$  to  $n_E$ , Fig. 4) and a minimum receivable moment ( $0+$ , no thrust capable below 0), wherein adjusting of the first and second working points is conducted via the hydrodynamic coupling (col. 5, lines 61-67), wherein the transferable moment of the hydrodynamic coupling corresponds to the minimum moment that can be output or received by the exhaust gas turbine over most of the speed difference that characterizes the slip range (col. 5, lines 5-11), taking into consideration the gear ratio or multiplication of the transfer elements in the transfer device (Figs. 1 and 2) relative to the exhaust gas turbine (Fig. 4).

3. Regarding claims 12-17, Hiereth et al. disclose the method of claim 11, including the hydrodynamic coupling having a constant filling ratio ( $f$ , Fig. 4), the filling ratio having a moment course which lies, over a substantial portion of the slip range ( $n_L$  to  $n_E$ ), in the region of the minimum moment that can be received or output by the turbine (line  $f$ , Fig. 4), controlling a filling ratio of the coupling based on a regulated open loop (col. 6, lines 44-47) and wherein the regulation of the filling ratio is regulated by the pressure difference between the inlet and outlet of the working chamber (col. 6, lines 51-58), the working points adjusted by closed loop operation (constant filling ratio, Fig. 4) or open loop regulation (variable fill rate, Fig. 4) of the speed or value of the turbine that characterizes the speed (pressure difference, col. 6, lines 51-58), comparing a value (pressure) that characterizes the speed of the turbine and continuously determined to the set speed ( $n_a$ ) that is to be adjusted, producing a set value for controlling the coupling in advance as a function of the regulated deviation (col. 5, lines 40-49).

4. Regarding claims 18-22, Hiereth et al. disclose the driveline, coupling and method of claims 11 and 12 further comprising detecting an operating state of the braking operation with the engine brake in the presence of a speed of the turbine ( $n_a$ ) that is greater than the speed of the crankshaft (abscissa, Fig. 4) taking into consideration the gear ratio or multiplication of the transfer device and detecting the partial load operation in the presence of a speed in the turbine ( $n_a$ ) again taking into consideration the multiplication of the transfer device smaller than the speed of the crankshaft excluding full load operation (Fig. 4), a driveline wherein the coupling is an open-loop regulatable coupling with a variable filling ratio (col. 6, lines 51-58) and the coupling has a control device that comprises a setting device for forming the set value for the control of a setting device of the coupling (col. 5, lines 26-32).
5. Regarding claim 24, Hiereth et al. disclose the coupling of claim 21 including the first and second working points adjusted by closed-loop control of the speed of the turbine (constant fill ratio,  $n_a$ , Fig. 4) and open-loop regulation of the turbine speed (variable fill ratio,  $n_a$ , col. 6, lines 44-47).

#### ***Response to Arguments***

6. Applicant's arguments filed 1/14/08 have been fully considered but they are not persuasive. Regarding the argument that Hiereth does not disclose a maximum acceptable limiting speed and minimum outputtable moment of the turbine during a braking operation, the Examiner respectfully disagrees. As Fig. 4 illustrates, a braking operation is present during B1 anywhere from  $nM$  to the point where B1 peaks at  $f$ . The fully controllable hydrodynamic coupling adjusts its filling ratio as the engine speed  $n$  is

varied in the second gear g2 (col. 6, lines 5-29) depending on the braking capacity available. Through this range, a speed is limited by naA, as shown in the uppermost region of Fig. 4 and the minimum outputtable moment of the turbine must be zero since compressor power is taken up by the braking operation (col. 6, lines 8-13).

7. Regarding the argument that Hiereth does not disclose a minimum speed and minimum receivable moment at a second working point during a partial load or thrust operation, the Examiner respectfully disagrees. Hiereth illustrates in Fig. 4 a speed na at which g1 meets nE. The change-speed gearbox determines this speed anywhere between nL and nE, but usually at approximately 1000-1200 rpm (col. 5, lines 18-21). When a minimum speed and moment are detected by the controller or by the lambda sensor (col. 6, lines 50-57), the transition to gear 2 is initiated. During all braking and partial load operations, the hydrodynamic coupling remains fully adjustable and controllable even to a constant filling ratio as required (col. 6, lines 43-50).

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 3748

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS J. DUFF whose telephone number is (571)272-3459. The examiner can normally be reached on M-Th 7 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas E. Denion/  
Supervisory Patent Examiner, Art Unit 3748

/Douglas J Duff/  
Examiner, Art Unit 3748  
4/9/08